Amendments to the Claims:

This listing of the claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (currently amended) In a graphics system including a 3D graphics ~~circuits coupled to~~ processing chip having an embedded frame buffer, an anti-aliasing method comprising:

(a) rendering a multisampled data representation ~~in the embedded frame buffer~~ of a scene/image, the data representation comprising a plurality of scene/image pixels wherein a plurality of super-samples are programmably defined at different locations within each pixel, said rendering including performing edge and z rasterization of primatives within the image and further including:

generating a coverage mask corresponding to a plurality of adjacent pixels, the coverage mask identifying super-samples that are covered by a primitive fragment during rasterization; and

performing z buffering for each super-sample based upon the coverage mask;

(b) storing the rendered multisampled data representation in the embedded frame buffer; and

(c) ~~resampling the embedded frame buffer contents to provide an anti-aliased image~~ blending one or more super-samples from a plurality of pixels, said blending performed as part of a copy-out process during which contents of the embedded frame buffer are provided to an external destination resulting in an anti-aliased image for displaying.

2. (currently amended) The method of claim 1, further including programmably defining a super-sample pattern comprising three predetermined super-sample locations within each pixel for use in rendering the multisampled data representation, and using a

reconstruction filter ~~during resampling of~~ for blending super-samples from the embedded frame buffer during said copy-out process, wherein the reconstruction filter ~~uses multisamples~~ blends super-samples from two or more ~~than one pixel region~~ vertically aligned adjacent pixels to ~~obtain~~ produce data for a single resulting pixel.

3. (currently amended) The method of claim 2, wherein ~~a particular support area for the reconstruction filter is determined based on~~ the super-sample pattern is different among adjacent horizontal pixels.

4. (currently amended) The method of claim 1, further including varying a super-sample pattern ~~for multisamples~~ among adjacent pixels, and using a reconstruction filter during ~~resampling~~ blending, said reconstruction filter having a support region that extends beyond a single pixel

5. (currently amended) The method of claim 4, further including defining a particular support region for the reconstruction filter based on a particular super-sample pattern ~~for the multisamples~~.

Claims 6-11 (canceled)

12. (withdrawn) An anti-aliasing method, comprising:

(a) providing plural supersamples within each pixel of a pixel array;

(b) varying the spatial distribution of the supersamples within neighboring pixels of the pixel array;

(c) applying, to the array, an anti-aliasing filter having a pixel aperture including a current pixel and at least one of the supersamples from at least two neighboring pixels to the current pixel; and

further including storing the pixel array in an embedded frame buffer, and applying the anti-aliasing filter during a copy out operation from the embedded frame buffer to an external destination.

13. (withdrawn) The method of claim 12, wherein the varying of the supersamples defines a sample pattern, and further including defining the aperture of the antialiasing filter based on the sample pattern

14. (withdrawn) The method of claim 13, wherein the sample pattern repeats on a pixel quad basis.

15. (withdrawn) The method of claim 14, wherein the sample pattern is different for each pixel in a pixel quad.

16. (withdrawn) In a graphics chip including an embedded frame buffer, an anti-aliasing method comprising:

(a) storing a supersampled image in the embedded frame buffer;

(b) transferring the stored image from the embedded frame buffer to an off-chip destination; and

(c) in the process of transferring the image, resampling the image to provide an anti-aliased version of the image.

17. (withdrawn) The method of claim 16, further including defining a sampling pattern for use in generating the supersampled image, wherein the sampling pattern varies between adjacent pixels of the image.

18. (withdrawn) The method of claim 17, wherein the resampling includes using a blending filter having a pixel aperture which is greater than one pixel.

19. (withdrawn) The method of claim 18, further including defining the pixel aperture based on the sampling pattern.

Claims 20-33 (canceled)

34. (currently amended) A graphics system, an apparatus for anti-aliasing super-sampled pixels, comprising:

means for programmably defining three sample locations for obtaining super-sampled color data associated with a pixel for each of a plurality of neighboring pixels;

coverage mask means to enable/disable samples corresponding to said sample locations, the coverage mask means being based at least in part on corresponding portions of each pixel that are occupied by rendered primitive fragments; ~~and~~

means for performing z buffering for each super-sample based on the coverage mask; and

color data blending filter means for combining color data from at least two super-sampled color data to provide a pixel final color value.

35. (previously presented) The system of claim 34, wherein said blending filter means comprises a means for computing a weighted average of samples.

36. (previously presented) The system of claim 34, wherein said blending filter means comprises a means for computing a weighted average of color data of at least three samples corresponding to a current pixel and at least two samples corresponding to a pixel immediately above the current pixel and at least two samples corresponding to a pixel immediately below the current pixel.

37. (previously presented) The system of claim 34, wherein the blending filter means further comprises a weighting coefficient means for selectively weighting each sample of color data for computing a weighted average of color data, the graphics system including a means for programmably defining a weight coefficient associated with each sample.

38. (currently amended) In a graphics system, a method of providing full-scene anti-aliasing, comprising the steps of:

(a) defining three super-sampled color data locations associated with a pixel for each of a plurality of neighboring pixels;

(b) blending color data corresponding to each of the three super-sampled color data locations within a first pixel with color data from two super-sampled color locations of a second pixel located immediately above ~~the current~~ said first pixel and with color data from two super-sampled color locations of a third pixel located immediately below ~~the current~~ said first pixel; and

(c) displaying ~~a~~ said first pixel having a color corresponding to the ~~blend~~blending.

39. (currently amended) The method of claim 38, wherein the blending step (b) includes assigning color blending weights for at least the ~~seven~~ super-sampled color data locations used in blending color data, and computing a weighted average of blended color data based at least in part on assigned weights.

40. (withdrawn) In a graphics system, a method of anti-aliasing pixels wherein each pixel is subdivided into a plurality of super-sampled portions identified by locations programmably defined therein, comprising the steps of:

(a) defining a plurality of super-sampled locations for each of a plurality of neighboring pixels;

(b) using coverage masks to develop color data for super-samples corresponding to locations defined in step (a), the coverage masks being based at least in part on corresponding portions of each pixel that are occupied by primitive fragments; and

(c) blending color data from at least two selected super-samples obtained from locations defined in step (a) during a copy-out operation to provide a filtered pixel color value.

41. (currently amended) In a graphics system, a pixel data processing arrangement having a ~~multi-tap~~ programmable selectable-weight blending filter characterized by a ~~vertically arranged~~ vertically-disposed ~~multiple~~three-pixel filter support region wherein ~~one or more~~ at least two color data samples from ~~a plurality of~~ three vertically disposed pixels are blended to form a single pixel color.

42. (currently amended) In a graphics system, a pixel data processing arrangement for providing full-scene anti-aliasing and/or de-flickering interlaced displays, comprising:

a frame buffer containing super-sampled pixel data for a plurality of pixels;

a plurality of scan-line buffers connected to receive super-sampled pixel color data from the frame buffer; and

a ~~multi-tap selectable-weight blending~~ programmable selectable-weight blending filter coupled to the scan-line buffers, the blending filter characterized by a ~~vertically-arranged multiple-pixel~~ vertically-disposed three-pixel filter support region wherein one or more color data samples ~~from~~ are programmably weighted and selected from different positions within ~~a plurality of~~ three vertically ~~disposed~~ aligned neighboring pixels, ~~are~~ said samples being blended to form a single pixel color.

43. (previously presented) An apparatus for anti-aliasing as set forth in claim 42, wherein pixel data in the frame buffer also includes depth (Z data) information.

44. (currently amended) An arrangement that anti-aliases super-sampled pixels comprising:

an embedded frame buffer storing three ~~super-sample locations within~~ super-samples from each pixel of a pixel array, each ~~said super-sample location~~ super-sample having a corresponding color value; and

a one-dimensional color data blending filter that blends the three super-sample color values of a pixel with super-sample color values ~~of~~ from vertically adjacent neighboring pixels while information within the embedded frame buffer is being transferred to ~~a destination~~ an external frame buffer.

45. (previously presented) The arrangement of claim 44, wherein the embedded frame buffer stores no more than three super-sample locations within each pixel.

46. (canceled)

47. (previously presented) The arrangement of claim 44, wherein the filter blends super-sample color values corresponding to three vertically aligned pixels to produce a screen pixel output.

48. (withdrawn) An anti-aliasing method comprising:
programmably defining plural super-sampled locations within at least one screen pixel, each said super-sampled location having a corresponding color value; and
blending said super-sampled color values using a vertical filter during a copy-out operation from an embedded frame buffer to an external frame buffer.

49. (withdrawn) Within a pixel quad having first, second, third and fourth pixels and a quad center, a method of defining an optimal set of three super-sampling locations for anti-aliasing, said method comprising:

(a) defining a first set of super-sample locations for a first pixel in the pixel quad at the following coordinates (range 1-12) relative to the quad center:

(12,11)
(4,7)
(8,3);

(b) defining a second set of super-sample locations for a second pixel in the pixel quad at the following coordinates (range 1-12) relative to the quad center:

(3,11)
(11,7)
(7,3);

(c) defining a third set of super-sample locations for a third pixel in the pixel quad at the following coordinates (range 1-12) relative to the quad center:

(2,2)
(10,6)
(6,10);

(d) defining a fourth set of super-sample locations for a fourth pixel in the pixel quad at the following coordinates (range 1-12) relative to the quad center:

(9,2)

(1,6)

(5,6);

(e) using a resampling filter having a support area that uses three supersamples from a current pixel, two super-samples from a pixel immediately above the current pixel, and two samples from a pixel immediately below the current pixel; and

(e) using respective weighting coefficients in the resampling filter having the following values: 1/12, 1/6, 1/6, 1/6, 1/6, 1/6, 1/12.